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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,745	06/23/2008	Heike Barlag	32860-001088/US	2476

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EXAMINER	
ROSENWALD, STEVEN ERIC	
ART UNIT	PAPER NUMBER
1759	

NOTIFICATION DATE	DELIVERY MODE
03/08/2012	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/587,745	BARLAG ET AL.	
	Examiner	Art Unit	
	STEVEN ROSENWALD	1759	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 November 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-26 and 29-32* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-26 and 29-32* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 17 November 2011 has been entered.

Claim Status

2. Claims 1-26, 29, and new claims 30-32 are presented for examination.

3. Claims 27 and 28 have been cancelled.

4. The amendments to the claims do not place the application in condition for allowance.

Response to Arguments

5. Applicant's arguments filed 17 November 2011 have been fully considered but they are not persuasive. Applicant argues that the polymeric substrate of Bentsen et al. U.S. Patent Publication 2002/0195345 (hereinafter "Bentsen") and the PVC substrate of Girault et al. U.S. Patent No. 5,635,054 (hereinafter "Girault") are not metal substrates. While Examiner agrees that polymeric and PVC substrates are not metal substrates, these substrates are provided as part of the process of making the devices of Bentsen and Girault.

Applicant is reminded that the courts have held that "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113.

As drawn in Applicant's figures, for example Figures 2, 3, and 6, the electrode array of the instant application comprises numerous individual metal areas (e.g. Fig. 3 10i and 11i, Fig. 6 "WE" and "CE"), electrically isolated from one another (see Claim 1) and held in array formation in part by the insulating layer (see specification pars. 0024-0025). The metal layer (for example, "WE" and "CE" of Fig. 6) of this construction of metal held in place by an insulating layer is considered to be the "metal substrate" of the instant application.

Referring to Girault Figure 1 and description col. 5 beginning at line 10, layer 3 of conducting material" is considered to read on the "metal substrate" of the instant application in view of Girault col. 3 lines 17-18, "Arrays of electrodes can be made from different conducting materials (e.g. platinum, gold, carbon etc)." Examiner notes that the individual electrodes in the embodiment of the metal substrate of Girault Figure 1 are not electrically isolated from one another. However, Girault teaches (col. 3 lines 23-26) that the "apertures" (which are the electrode locations) can be individually addressed to a set electric potential, therefore Girault contemplates individual electrodes due to the

fact that the conductive material in the "apertures" cannot be individually addressed to differing set potentials if they are in electrical contact with each other.

Referring to Bentsen paragraph 0012-0014, a flexible polymeric substrate provides a plurality of electrodes disposed on the first or second surface at a plurality of microlocations. The plurality of microlocations include vias which provide a location for the formation of the electrodes by securing a conducting metallic layer on the second or lower surface of the flexible substrate and then selectively removing the polymeric substrate above the conducting metallic layer. Suitable metals including gold, platinum, and silver are described at paragraph 0052. Note Bentsen Figures 1 (bottom view), 2a (enlarged top view), and 3, where 14 is a microlocation corresponding to 15 an electrode, 20 is a metal trace, and 16 is a top surface of the flexible polymer 12. As can be seen in these figures, the electrodes are all electrically isolated from one another, therefore layer 30 is considered to read on the "metal substrate" of the instant claims.

Applicant additionally argues that Girault “teaches away from the use of a metal substrate due to adhesion problems between the insulating layer and a metal substrate” (Remarks pg. 10 closing paragraph to pg. 11). This argument is not persuasive. Girault cites as prior art Osteryoung, J. and Hempel, T., J. Electrochem. Soc., 1986. 133, 757-760 (“Osteryoung”, incorporated herein for reference) as an approach that "failed because of adhesion problems between the insulating photoresist layer and the metal substrate.” Examiner is unable to find such teaching in the Osteryoung reference, and notes that even if such teaching were found, difficulty coating a metal with photoresist

does not teach away from the use of a metal substrate in the process of fabricating an electronic device.

A new search was conducted. The new search confirmed that Girault and Bentsen are still considered the closest prior art. New rejections of the claims are supplied.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 12, 17, 29, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Girault et al. U.S. Patent No. 5,635,054 (“Girault”) and further in view of Bentsen et al. U.S. Publication No. 2002/0195345 A1 ("Bentsen").

Regarding claim 1, Girault discloses a biosensor (col. 3 lines 27-31, col. 7 lines 7-9) operating on an electrochemical detection principle (col. 3 lines 56-57), comprising: a transducer array (col. 1 lines 53-57, col. 3 lines 23-26), containing a flexible metal/isolator composite (col. 1 lines 46-57) composed of a metal layer (col. 2 lines 24-25, col. 3 lines 17-18, Figs. 1 and 2 at “3”) and an isolator layer (col. 2 lines 25-32, col. 5 lines 10-13, Figs. 1 and 2 at “2”) with a permanent connection between a surface of the metal layer and a surface of the isolator layer (col. 2 lines 31-32, col. 5 lines 10-13),

the metal layer being in the form of a metal substrate (col. 5 lines 10-13, col. 3 lines 17-18) and being structured in such a manner that metal areas which are electrically isolated from one another are produced (col. 3 lines 23-26),

the isolator, located on a first surface of the metal substrate (col. 1 lines 47-50, col. 5 lines 10-13, Figs. 1 and 2 at “2”), the isolator having open spaces formed therein such that the first surface of the metal substrate remain as sensor surfaces in the isolator surface (Abstract, Figs. 1 and 2), and

discrete electrodes, the metal areas each including associated individual measurement electrodes and at least one reference electrode (col. 3 lines 23-26 and claim 12).

However, Girault does not teach the metal substrate includes areas that are contactable with, on a second surface facing away from or opposite the first surface.

Bentsen teaches (par. 0017 and Fig. 4D) electrodes ... may be connected ... on the first and second surface of the flexible polymeric substrate. “Second surface” reads on the claim. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to modify the microelectrode array of Girault with the second surface connection of Bentsen in order to enable the first surface bearing the exposed electrodes to be directly laminated to a fluid handling architecture that directs the fluid sample to the electrode array, overcome arduous wire bonding processes and overcome the need to encapsulate the lead wires in a protective material as taught by Bentsen (par. 0017).

Regarding claim 12, Girault teaches (claim 13) that the reference electrode is an Ag/AgCl electrode.

Regarding claim 17, Girault teaches (a)n assay device … which is connected to a potentiostat (col. 4 lines 41-43).

Regarding claim 29, Girault teaches (col. 2 lines 24-25) conducting material is suitably a thixotropic paste based on carbon or metallic particles.

Regarding claim 32, Girault teaches (col. 1 lines 53-57) "(a) particularly preferred form of electrode made by the method of this invention is a microdisc array electrode in which the apertures are of the same size and shape and are distributed over the sheet in a regular array."

7. Claims 1-21 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bentsen et al. US 2002/0195345 A1 ("Bentsen") and further in view of Girault et al. U.S. Patent No. 5,635,054 ("Girault").

Regarding claim 1, Bentsen discloses a biosensor (par. 0011) operating on an electrochemical detection principle (par. 0025), comprising:

a transducer array (par. 0011), containing a flexible metal/isolator composite (pars. 0012, 0051) composed of a metal layer ("30" of Fig. 4A, "34" of Figs. 4B-4E) and an isolator layer ("32" of Figs. 4A-4E) with a permanent connection between a surface of the metal layer and a surface of the isolator layer (par. 0051 and Figs 4A-4E),

the metal layer being in the form of a metal substrate (pars. 0014 and 0051, "30" of Fig. 4A, "34" of Figs. 4B-4E) and being structured in such a manner that metal areas which are electrically isolated from one another are produced (par. 0015, 0027, 0043, 0051),

the isolator, located on a first surface of the metal substrate, the isolator having open spaces formed therein such that the first surface of the metal substrate remain as sensor surfaces in the isolator surface (pars. 0014 and 0051), wherein,

the metal substrate includes areas that are contactable with, on a second surface facing away from or opposite the first surface, discrete electrodes (par. 0017, Fig. 4E, where “contactable with” is considered intended use, and the exposed bottom surface of the "trace" at 34 is "contactable"), the metal areas each including associated individual measurement electrodes (par. 0012).

Bentsen is silent on at least one reference electrode. However, Bentsen does teach detection of electrical signals in response to biological events at the individual electrodes (par. 0024), that the charge potential of the electrodes can be individually controlled (par. 0027), enzyme based electrodes (par. 0083), and analysis of antibody/antigen reactions (par. 0011).

Girault teaches (col. 3 lines 23-26) that electrodes can be individually addressed to a set electric potential, (col. 3 lines 28-31) immobilization of reactants (enzyme or antibody) onto the insulating area by covalent bonding allowing direct application to biosensor and biochemical assay technology, a (col. 6 line 18) counter electrode (reads on reference electrode) for (col. 6 lines 42-47) voltammetric analysis with a working electrode and a controlled voltage secondary electrode (reads on reference electrode), and (claim 12 and see Figs. 6 and 7) a reference electrode. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to modify the biosensor of Bentsen with the reference electrode of Girault in order to enable the

detection of electrical signals in response to biological events such as the enzyme based electrodes of Bentsen using voltammetry as taught by Girault (col. 3 lines 32-34 and col. 7 lines 6-14). Regarding claim 12, Girault teaches (claim 13) that the reference electrode is an Ag/AgCl electrode.

In regard to claims 2-26 and 29, Girault and Bentsen teach the device of claim 1 and;

Regarding claim 2, Bentsen teaches (par. 0051, 36 at Fig. 4C) vias (reads on cavities) wherein portions of substrate are removed or "milled" away from each of the electrodes, thereby exposing bare metal, and Girault teaches (col. 1, lines 47-50) apertures (reads on “cavities”) formed in the layer of electrically insulating material and electrically conducting material visible through the apertures.

Regarding claim 3, Bentsen teaches (par. 0017) electrodes formed by exposure to the metal layer may be connected by metal traces to much larger contact pads located elsewhere on the first or second surface of the flexible polymeric substrate. “Second surface” reads on “opposite side”.

Regarding claim 4, Bentsen teaches (par. 0017) electrodes formed by exposure to the metal layer may be connected by metal traces to much larger contact pads located elsewhere on the first or second surface of the flexible polymeric substrate. “First or second surface” reads on “exposed on both sides”.

Regarding claim 5, Bentsen teaches (par. 0017) electrodes formed by exposure to the metal layer may be connected by metal traces to much larger contact pads located elsewhere *on the first or second surface* of the flexible polymeric substrate.

"connected by metal traces to much larger contact pads located elsewhere" reads on "the contacts are laterally offset".

Regarding claim 6, Bentsen teaches (par. 0027) a plurality of electrodes and that the charge potential of the electrodes preferably can be individually controllable, and Girault teaches *apertures or groups of apertures* (with apertures created to expose electrode surfaces, see Abstract) within an array can be individually addressed to a set electric potential (col. 3 lines 23-24) and (col. 6 lines 14-22 and Figs. 6 and 7) a single sensor device comprising two electrodes with two electrically isolated metal areas.

Regarding claim 7, Bentsen teaches (Figures 2A, 2B, and 8E) microelectrodes extend through the flexible polymeric substrate from bottom surface to top surface to define corresponding microlocations (par. 0049) and that the substrate can have more than one layer and the metal traces may be positioned on one or more layers (par. 0055).

Regarding claim 8, Bentsen teaches (par. 0027) a plurality of electrodes and that the charge potential of the electrodes preferably can be individually controllable.

Regarding claim 9, Bentsen teaches (par. 0016) electrodes enlarged by deposition of additional metal … such as gold, and (par. 0052) (s)uitable metals include aluminum, gold, silver, tin, copper, palladium, platinum, carbon and various metal combinations (reads on noble metal alloy), and Girault teaches (col. 3 lines 17-18) electrodes can be made from different conducting materials (e.g. platinum, gold, carbon etc.).

Regarding claim 10, Bentsen teaches (par. 0016) electrodes enlarged by deposition of additional metal (reads on “coated with”) … such as gold (noble metal) and (par. 0052) various metal combinations (reads on “alloy”).

Regarding claim 11, Bentsen teaches (par. 0052) carbon (reads on graphite) and Girault teaches (col. 2 lines 6-8) a particular advantage when the electrode material includes carbon, since one photo-ablation used to form the apertures can vitrify (make glassy) one carbon in the areas of electrode material and teaches (col. 2 lines 24-25) (t)he conducting material is suitably a thixotropic paste based on carbon, which reads on the instant claim.

Regarding claim 13, Bentsen teaches (par. 0096) providing an electrolyte (sentence 1 reads on electrolyte), which prima facie wets electrodes (plural) and that “BSA was positively charged and accumulated at negatively biased electrodes” which reads on the instant claim.

Regarding claim 14, Bentsen teaches (par. 0046) (a) biasing signal (voltage or current) is applied to selected electrodes, thereby accelerating transport of the target species into the hydrophilic matrix above the selected electrodes. The biasing voltage is subsequently stopped, with the target species concentrated at one *or more* of the microlocations, which reads on the instant claim.

Regarding claims 15 and 19, a person having ordinary skill in the art at the time of invention would have basic knowledge of the electrochemical circuits associated with the use of a potentiostat, including a two electrode cell, which includes a working and counter electrode, and a three electrode cell, which includes a working, counter, and

reference electrode. (See, for example, Bard and Faulkner, Electrochemical Methods, 1980, John Wiley & Sons pages 136, 137, and 563 attached.) Girault teaches (a)n assay device … which is connected to (e.g. plugged into) a suitable potentiostat (col. 4 lines 41-43), a working electrode (col. 6 line 43), a microelectrode and a counter electrode (col. 4 lines 50-51), and a reference electrode coated with silver chloride (claim 13), and Girault also teaches that groups of apertures (with apertures created to expose electrode surfaces, see Abstract) within an array can be individually addressed to a set electric potential (col. 3 lines 23-24) and the use of an electrode made by the method of this invention for redox species analysis using voltammetry (col. 3 lines 32-34). Therefore, since a person of ordinary skill in the art at the time of invention would know that a potentiostat may be used in a two- or three-electrode configuration it would have been obvious to a person of ordinary skill in the art at the time of invention to configure the device as cited in claim 15.

Regarding claim 16, 345 teaches (par. 0096) providing an electrolyte (sentence 1 reads on electrolyte), which prima facie immerses the electrodes, and (par. 0017) the first surface bearing the exposed electrodes can be directly laminated to a fluid handling architecture that directs the fluid sample to the electrode array, and Girault teaches (t)he micro-conducting areas of the electrode will be carbon and the (reference) electrode will be of silver/silver chloride and a sample of the water to be tested … will dissolve the salt and redox reagent (reads on electrolyte) forming a conductive solution between the electrodes (col. 6 lines 36-42).

Regarding claim 17, electrodes taught in the art as combined above can be connected to a potentiostat, therefore Bentsen is connectable.

Regarding claim 18, Bentsen teaches (par. 0017) electrodes connected to contact pads designed to mate directly with a voltage control unit, and (par. 0024) the voltage control unit simultaneously can provide processing currents or voltages, and (par. 0046) a biasing signal (voltage or current) is applied to selected electrodes, and Girault teaches (col. 4, lines 3-4) a programmed voltage scan (ramp or step formed) is used for the concentration measurement.

Regarding claim 20, Bentsen teaches (par. 0018) electrodes may be recessed within the vias (reads on cavities) in the flexible polymeric substrate, that biomolecules can be immobilized within the vias, and that biologically active molecules (par. 0022) are covalently anchored such that they are in contact with the array of electrodes (par. 0026), and Girault teaches (col. 3 lines 27-31) chemical immobilization of reactants (enzyme or antibody) onto the insulating area by covalent bonding in close proximity (col. 7 lines 12-13) between the electrode and the immobilized species (which reads on the instant claim).

Regarding claim 21, Bentsen teaches (par. 0056 and see Fig. 9, below) fluid handling architecture that is designed to confine a specified volume of sample-containing fluid as (a) single fluid volume over (an) array of microlocations, defined as (a) sample chamber.

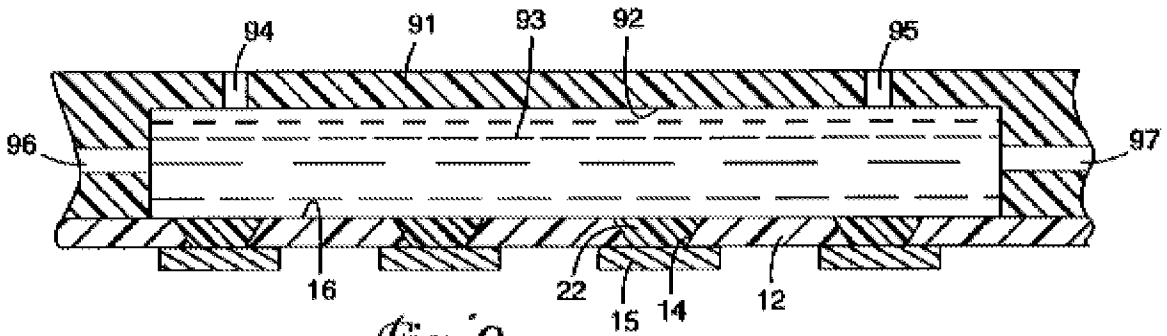

Fig. 9

As described in Fig. 9, 4 electrodes (15) are shown in the confined sample area (reads on cavity), although only one is labeled. Further, Girault teaches (col. 3 lines 23-26) that Apertures or groups of apertures within an array can be individually addressed to a set electric potential and therefore the electrode array could be used in multicomponent determination simultaneously

Regarding claim 29, Girault teaches (col. 2 lines 24-25) conducting material is suitably a thixotropic *paste based on carbon* or metallic particles and (col. 5 lines 19-20) a layer (of) cured carbon paste of a cured thickness of 500 microns. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to modify the device of Bentsen with the carbon paste of Girault so that where the paste is applied to a pre-drilled sheet of plastics material each aperture formed in the non-conducting sheet is substantially filled with conducting particles as taught by Girault (col. 2 lines 26-29).

Regarding claim 30, Bentsen discloses (par. 0015) selective removal of a non-conductive masking layer (par. 0051, “32" of Figs. 4A-4E) to form electrodes, and

formation of “vias” (“36” of Fig. 4C, which is the “open spaces of the isolator layer” instantly claimed) exposing a surface (“37” of Fig. 4C) of the metal substrate.

Regarding claim 31, Bentsen discloses the embodiment of Fig. 4E wherein the first (top) and second (bottom) surfaces of the metal substrate (“metal trace”, “34” of Fig. 4E) are exposed.

Regarding claim 32, the metal areas on the top (first side) of Bentsen (e.g. the electrodes at “15” of Fig. 2A, which is an enlarged top plan view, see par. 0049) are disclosed as substantially the same size and shape in the drawing. The metal areas on the bottom (second side) of Bentsen are disclosed in Fig. 1, reproduced below. Pairs of metal areas such as those indicated at arrows P1, and continuing in a clockwise fashion around the array, are of substantially the same size and shape.

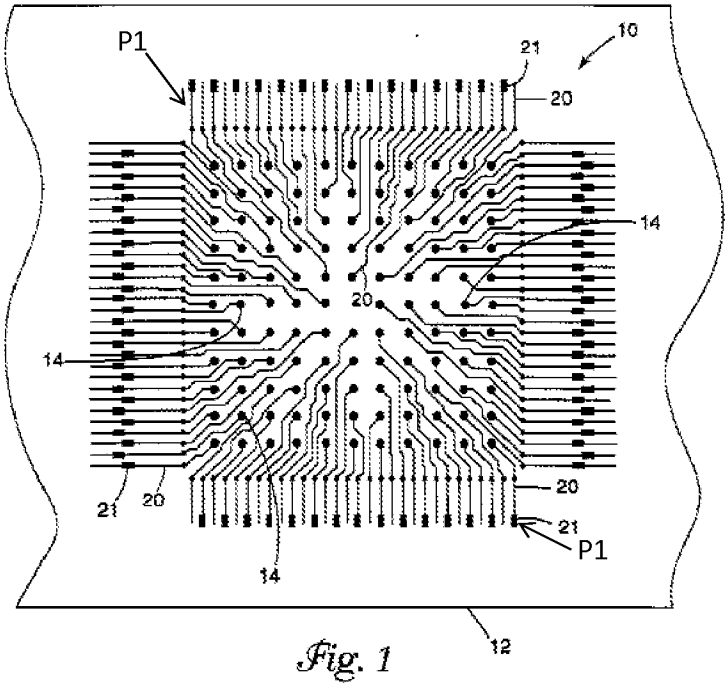

Fig. 1

8. Claims 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bentsen et al. US 2002/0195345 A1 (Bentsen) in view of Girault et al. US 5635054 (Girault) as applied to claims 1-21 above, and further in view of Hodges et al. US 2005/0173246 A1 (Hodges).

Bentsen et al. US 2002/0195345 A1 (Bentsen) and Girault et al. US 5635054 (Girault) are relied upon for the reasons given above, but neither teaches a separate metal surface closing a cavity.

Regarding claim 22, Figures 6 and 7 and the text at column 4 lines 27-49 of Girault teaches a working and reference electrode with a measurement area between them, and Bentsen teaches an enclosed sample chamber (par.0056 and Fig. 9 below, see claim 24), but Girault and Bentsen do not disclose a separate metal surface closing a cavity. However, Hodges teaches (par. 0050 and Fig. 1) a biosensor in the form of a thin strip membrane 1 having upper and lower surfaces 2, 3 and having a cell zone 4 defined between a working electrode 5 disposed on upper surface 2 and a counter electrode 6 disposed on lower surface 3. Hodges also teaches (par. 0002) (e)lectrochemical biosensors generally comprise a cell having a working electrode, a counter electrode and a reference electrode. Sometimes the function of the counter and reference electrodes are combined in a single electrode called a "counter/reference" electrode.

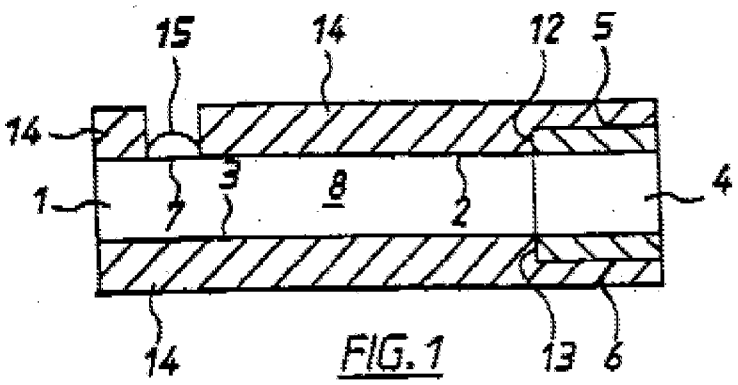

FIG. 1

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to modify the biosensor of Bentsen in view of Girault with the working electrode disposed on upper surface and a counter electrode 6 disposed on lower surface of Hodges so that the electrodes are separated by a distance "1" which is sufficiently close that the products of electrochemical reaction at the counter electrode migrate to the working electrode during the time of the test and a steady state diffusion profile is substantially achieved as taught by Hodges (par. 0050).

Regarding claim 23, Bentsen teaches (par. 0017) electrodes connected to contact pads designed to mate directly with a voltage control unit, and (par. 0024) the voltage control unit simultaneously can provide processing currents or voltages, and (par. 0046) a biasing signal (voltage or current) is applied to selected electrodes, and Girault teaches (col. 4, lines 3-4) a programmed voltage scan (ramp or step formed) is used for the concentration measurement, and Hodges teaches (par. 0011) applying an electric potential difference between the electrodes.

Regarding claim 24, Bentsen teaches (par. 0056 and see Fig. 9, above) fluid handling architecture that is designed to confine a specified volume of sample-

containing fluid as (a) single fluid volume over (an) array of microlocations, defined as (a) sample chamber.

As described in Fig. 9, 4 electrodes (15) are shown in the confined sample area (reads on cavity), although only one is labeled. Further, Girault teaches (col. 3 lines 23-26) that Apertures or groups of apertures within an array can be individually addressed to a set electric potential and therefore the electrode array could be used in multicomponent determination simultaneously, and Hodges teaches a working electrode disposed on upper surface and a counter electrode disposed on lower surface in Fig. 1 of Hodges and that (par. 0002) (e)lectrochemical biosensors generally comprise a cell having a working electrode, a counter electrode and a reference electrode. All 3 devices are considered to read on the instant claim.

Regarding claim 25, for examination purposes claim 25 is considered to be dependent on claim 22. Girault teaches (claim 13) a silver/silver chloride reference electrode and Hodges teaches (par. 0081) silver halide (reads on chloride) may also be used to form the counter/reference electrode.

Regarding claim 26, claim 26 has been rejected under 35 U.S.C. 112, second paragraph, as being indefinite. However, Bentsen teaches (par. 0016) electrodes enlarged by deposition of additional metal … such as gold, and (par. 0052) (s)uitable metals include aluminum, gold, silver, tin, copper, palladium, platinum, carbon and various metal combinations (reads on noble metal alloy), and Girault teaches (col. 3 lines 17-18) electrodes can be made from different conducting materials (e.g. platinum,

gold, carbon etc.). Any of the listed metals would be considered to read on the instant claim.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEVEN ROSENWALD whose telephone number is (571)270-1149. The examiner can normally be reached on M-F, 8A to 4:30P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Barton can be reached on (571)272-1307. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. R./
Examiner, Art Unit 1759

/Jeffrey T Barton/
Supervisory Patent Examiner, Art Unit 1759
2 March 2012